

## **PROCESS OF FORMING A DESIRED WALL SURFACE**

### Cross-Reference to Related Applications

This application claims priority to U.S. Provisional Patent Application Serial  
5 No. 60/445,476, filed February 5, 2003, and entitled "Process of Forming a Desired Wall  
Surface and Mold for Making Same".

### Technical Field

The present invention relates generally to devices and methods of interior building  
construction, and more particularly to a novel process of forming a desired wall surface and  
10 mold for making the same.

### Background

Conventional methods for attaching bathroom fixtures to bathroom walls are  
relatively labor intensive. For example, to construct a recess in a shower wall for storing  
soap or shampoo, construction workers cut an opening in the wall and build a wood frame  
15 that defines the desired recess. The process of building the frame is time-consuming and  
adds unnecessary cost to the project. Further the frame building process can lead to  
irregularities in the ultimate recess of the shower wall because of the custom-nature of the  
operation. That conventional process is completed by building and finishing a recess (for  
example to be used as a shampoo/soap tray). A typical conventional process will take  
20 several hours, whereas the to-be-described process of the invention can be accomplished in  
several minutes.

### Brief Description of the Drawings

Fig. 1 is an isometric view of a mold feature of the invention and constructed in accordance with a first embodiment of the invention.

Fig. 2 is a side-sectional view through line 2-2 of Fig. 1.

5 Fig. 3 is a fragmentary, side-sectional view of a wall that has been modified in accordance with the process feature of the invention.

Fig. 4 is a fragmentary, side-sectional view of a wall that has been further modified relative to Fig. 3 in accordance with the process feature of the invention.

10 Fig. 5 is a fragmentary, side-sectional view of a wall that has been further modified relative to Fig. 3 in accordance with the process feature of the invention.

Fig. 6 is an isometric view of a mold feature of the invention and constructed in accordance with a second embodiment of the invention.

Fig. 7 is an isometric view of a mold feature of the invention and constructed in accordance with a third embodiment of the invention.

15 Fig. 8 is an isometric view showing shower wall surfaces that have formed according to the process of the invention, using the mold feature of the invention.

### Detailed Description

#### and Best Mode of Carrying Out the Invention

Referring to the drawings generally, the shape structure (also referred to herein as a  
20 mold) is shown first, and its construction will be described first below. Next, the pertinent sections and parts of the wall will be described. Finally, the process feature of the invention will complete the description.

Fig. 1 shows shape structure or mold 10 usable to form a to-be-described, desired wall surface. Mold 10 includes a first region 12, which may be a flange, constructed for being attached to a to-be-described wall, and a second region 14, which may also be thought of as a body, constructed for being located in an opening formed in that wall. As will be better understood in connection with the process description below, body 14 is constructed to form either a recess or a protrusion when placed in the opening of that wall.

Turning ahead to Fig. 5, flange 12 is constructed for being attached to a wall 16 and body 14 is constructed for being located in an opening 18 formed in wall 16. Wall 16 is depicted in the drawings as a shower wall of a shower located in a residential house (undepicted). Referring to Figs. 3-5, the interior of that shower wall is to the right in the drawings, and the exterior of that shower wall (the surface facing the outer structure of the house) is to the left in the drawings. Mold 10 also includes a third region 20 for fastening to wall 16. Third region 20 is shown in the form of openings that allow a screws 22 (or other suitable fasteners) to pass through, ultimately to fasten mold 10 to wall surface 16.

Referring to Figs. 3-5 collectively, preliminary wall 16 is modified by suitable means such as cutting to form an opening 18. Cross-members 24 are located between wall 16 and the exterior structure of the house (undepicted) to provide support for the opening and ultimately for corresponding parts of mold 10. Referring to Figs. 4-5, one way to finish the surface of wall 16 is shown by existence of a wire-mesh layer (Fig. 4) to which is applied a plaster or other suitable material 28 (Fig. 5). Finally, the outer surface is finished with a coating 30 that may take the form of ceramic tile, paint, or other suitable coating material.

As an alternative to the wire-mesh and plaster combination, so-called cement backer board may be used.

Referring to Figs. 6-7, mold 10 may be formed in any desired shape. In Fig. 6, mold 110 is formed to be oriented as a protrusion in a wall surface. In Fig. 7, mold 210 is formed as a particular protrusion that extends outward of the wall so that it can be utilized as a bench in a shower (such as a square). The flange of the mold, such as flanges 114, 214 in Figs. 6-7 may be thought of as relatively large and relatively thin to optimize their use in attaching the mold to a preliminary wall 16. Wall 16 may also be thought of as drywall.

Referring to Fig. 8, a shower 32 is shown with walls 34, a nozzle 36 and a drain 38. Various embodiments of the invention are shown including recess 10, protrusions/shelves 110 and protrusion/bench 210. One application of the process of the invention is to form either recesses or protrusions. The protrusions may be thought of as working surfaces (such as bench 210 shown in Fig. 8) in a shower. For example, the inventions can be used to form recess 10 that extends into the shower wall, and has a desired shape (such as the square or rectangular shape of mold 10, and at a minimum having a lower flat surface, for holding soap or shampoo). The invention can also be used to form shapes that extend inwardly toward the shower cavity, thus forming protrusions that can be used as shower bench 210 of Fig. 8, shelf 110 of Fig. 8, for a decorative and distinctive look (as shown by bench 210 and shelves 110, or other desired purposes.

Turning now to the process of the invention, that feature includes a process of forming a desired wall surface, that includes the steps of forming an opening 18 in a preliminary wall (such as wall 16 formed as drywall), fastening shape structure (also referred

to as mold) 10 within the opening, and finishing mold 10 and preliminary wall 16 to achieve the desired wall surface. The fastening step includes the substeps of locating the mold within the opening, and attaching a region (flange 12) of the mold structure to preliminary wall 16. As noted above, wall 16 is a preliminary wall of an interior building. The forming step may be done by cutting opening 18 in preliminary wall 16 using any suitable means such as a saw. The fastening step may also include choosing mold 10 ultimately to form a recess in the desired wall surface (see mold 10 in Fig. 8), or to form a protrusion (see shelves 110 and bench 210) in the desired wall surface.

Another way to describe process of the invention is as a process of forming a desired wall surface that includes the steps of forming an opening in a preliminary wall that has an interior surface, selecting a mold with a first and second region and a first surface, locating the first region adjacent the opening, fastening the first region of mold to the wall; and finishing the surface of the mold and the surface of the preliminary wall. These steps have been described in connection with Figs. 1-5 above.

The process also includes the step of sealing the first region of the mold relative to the wall. Sealing can be accomplished with any suitable water-proofing material such as a silicone sealant which is applied between flange 12 and wall 16, and also applied over the interface between flange 12 and wall 16. The ultimate step of finishing wall 16 and recess 10 may be accomplished by the wire-mesh/plaster method described above in connection with Figs. 4-5, by applying ceramic tile, or by using a suitable coating material such as painting.

The Process feature of the invention may also be described as follows: An opening is formed in a preliminary wall surface such as drywall. Next, the a flanged container formed in

a desired shape (such as a square box) is attached to the drywall. Next, there is the step of applying a finished wall surface over the flange section of the container.

Put another way, the process includes the following steps:

1. form opening in the wall by cutting or some other suitable fit;
- 5        2. apply sealant or caulk to flange region of mold so that the opening in the wall is sealed against water leakage;
3. fasten the flange edge of mold to wall with suitable fasteners such as screws;
4. apply or form a suitable substrate, if desired, of the flange (suitable substrates may include lathe and plaster or cement, otherwise known as cement backer board);
- 10       5. if a suitable substrate is not desired, then finish the outer surface with tile, paint, or other finish coatings; and
6. if a substrate is used, a finished surface such as ceramic tile or other suitable materials can be applied over the substrate and over the remaining surface of the mold.

Put yet another way, the invention may be thought of as a water-proof substrate of  
15    molded plastic to be covered with tile or other finishing material. Summarizing the above process, the mold is fastened to a wall surface (e.g. drywall). The flange region of the mold is sealed so that moisture cannot pass through the barrier where the mold is attached to the wall surface, and then the mold is fastened to the surface.

While various alternative embodiments and arrangements of the process and mold of  
20    the invention have been shown and described above, numerous other embodiments, arrangements, and modifications are possible and are within the scope of the invention. The foregoing description includes all novel and non-obvious combinations of elements described

herein, and claims may be presented in this or a later application(s) to any novel and non-obvious combination of these elements. The foregoing embodiments are illustrative, and no single feature or element is essential to all possible combinations that may be claimed in this or a later application.